

NetApp NS0-185

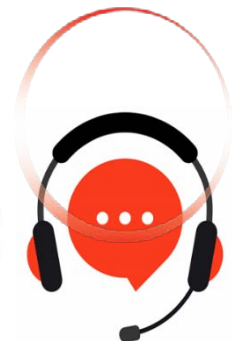
NetApp Storage Installation Engineer, ONTAP Professional Exam

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Question: 1

After the installation of a new NetApp FAS system, you use the NetAppDocs tool for site design documentation.

In this scenario, in which three document formats would you create an inventory report? (Choose three.)

- A. .docx
- B. .html
- C. .pdf
- D. .ps
- E. .xlsx

Answer: A,C,E

Explanation:

Within the ONTAP SAN solution assessment domain, NetApp emphasizes the creation of accurate and reusable documentation immediately after system installation. One of the supported tools for this purpose is NetAppDocs, which is designed to collect system configuration data and generate standardized inventory and design documentation. According to NetApp Storage Installation concepts and objectives, inventory reports must be produced in formats that support both technical review and customer handoff, while remaining editable and auditable. NetAppDocs is explicitly described in NetApp documentation as supporting Microsoft Word, Microsoft Excel, and PDF outputs for inventory-style reports. These formats align with operational best practices defined in installation and assessment workflows. Word (.docx) files are used to present structured design narratives and annotated configuration details. Excel (.xlsx) files are used to present tabular inventory data such as controllers, disk shelves, ports, adapters, WWPNs, and LIF assignments, which are critical for SAN assessment and future expansion planning. PDF (.pdf) files are used as finalized, non-editable deliverables suitable for compliance records, customer signoff, and archival purposes.

Formats such as HTML and PostScript (.ps) are not identified in NetApp Storage Installation objectives as supported NetAppDocs inventory outputs. These formats do not align with NetApp's standardized documentation deliverables and are not referenced in official installation or assessment documentation. As a result, they are excluded.

From a SAN-focused assessment perspective, the ability to generate Word, Excel, and PDF reports ensures consistency across deployment teams, simplifies validation of ONTAP SAN configurations, and supports accurate lifecycle documentation. These formats are repeatedly reinforced in NetApp installation guidance as the approved and supported inventory report outputs.

Therefore, the correct answers are A (.docx), C (.pdf), and E (.xlsx), as they are the only formats verified and supported for NetAppDocs inventory reporting within NetApp Storage Installation concepts and domains provided by NetApp.

Question: 2

You installed a new 4-node AFF A400 ONTAP 9.8 cluster. The AFF A400 controller data ports were automatically discovered by automatic port placement.

In this scenario, which two ONTAP network settings were automatically configured? (Choose two.)

- A. routes
- B. IPspaces
- C. broadcast domains
- D. subnets

Answer: C,D

Explanation:

Within the ONTAP SAN implementation and configuration domain, automatic port placement is a key installation feature designed to simplify initial network setup during cluster deployment. In ONTAP 9.8, when controller data ports are discovered, ONTAP automatically analyzes physical port connectivity, speed, and role, and assigns those ports to appropriate broadcast domains and subnets.

Broadcast domains define Layer 2 boundaries and group ports that share the same network reachability. During installation, ONTAP automatically creates and assigns broadcast domains based on detected network topology and intended port usage. This behavior is explicitly described in NetApp installation objectives as part of reducing manual network configuration during initial setup.

Subnets are also automatically created and associated when automatic port placement is enabled.

ONTAP uses subnets to manage pools of IP addresses for data LIF creation. By automatically configuring subnets, ONTAP enables rapid deployment of NAS and SAN data LIFs without requiring administrators to manually define IP address ranges during installation.

By contrast, routes are not automatically configured by automatic port placement. Routes must be explicitly defined by the administrator to control Layer 3 traffic flow between networks. Similarly, IPspaces are logical network containers that must be deliberately designed and created based on multi-tenancy or isolation requirements. IPspaces are never automatically created by ONTAP during installation because they have architectural implications that require administrator intent.

Therefore, the two ONTAP network settings that are automatically configured by automatic port placement are broadcast domains and subnets, making C and D the correct answers.

Question: 3

You were dispatched to install a cluster made up of FAS8060 and FAS8080 controllers. There are three FAS8060 controllers and three FAS8080 controllers.

Which solution would provide the largest possible cluster?

- A. a cluster made up of two nodes
- B. a cluster made up of four nodes
- C. a cluster made up of five nodes
- D. a cluster made up of six nodes

Answer: D

Explanation:

As part of the ONTAP SAN solution assessment domain, NetApp defines strict rules governing cluster composition and scalability. ONTAP clusters support a maximum of 24 nodes, and within that limit, clusters can include different controller models, provided they are supported by the same ONTAP release and meet hardware compatibility requirements.

Both FAS8060 and FAS8080 controllers are supported within ONTAP clusters and can coexist in a single cluster configuration. NetApp installation documentation explicitly allows mixed-controller clusters as long as the controllers are compatible and running the same ONTAP version.

In this scenario, there are six total controllers available: three FAS8060 and three FAS8080. Since ONTAP supports heterogeneous clusters and there is no architectural limitation preventing all six controllers from participating, the largest possible cluster is achieved by including all six nodes. Smaller cluster sizes—two, four, or five nodes—are technically valid but do not meet the requirement of providing the largest possible cluster. The assessment objective focuses on maximizing usable resources while staying within supported configuration guidelines. Additionally, ONTAP automatically manages performance balancing and high availability across mixed-controller clusters. Each node pair forms an HA pair, and ONTAP ensures consistent data access across the entire cluster fabric.

Therefore, the correct answer is D, a cluster made up of six nodes.

Question: 4

After moving a new AFF A400 cluster into production, the administrator notices error events in ONTAP System Manager regarding SAS HA issues.

In this scenario, which NetApp tool would have identified these errors after the installation process?

- A. Cloud Manager
- B. ONTAP System Manager
- C. Active IQ Config Advisor
- D. Active IQ Unified Manager

Answer: C

Explanation:

Within the ONTAP SAN implementation testing and troubleshooting domain, NetApp places strong emphasis on post-installation validation tools. One of the primary tools used immediately after installation is Active IQ Config Advisor.

Active IQ Config Advisor is designed specifically to validate hardware configuration, cabling, HA connectivity, and SAS topology. During post-installation checks, Config Advisor scans the system for configuration errors, miswired cables, unsupported connections, and SAS HA path issues. These checks are a mandatory part of NetApp installation best practices.

SAS HA issues, such as incorrect shelf cabling, missing redundant paths, or improper HA connections, are precisely the types of errors Config Advisor is designed to detect. It performs rule-based validation against NetApp-supported configurations and flags deviations before they result in operational problems.

By contrast, ONTAP System Manager displays events and alerts after the system is already operational, but it is not a post-installation validation tool. Cloud Manager is used for cloud-based storage management and is not applicable to on-premises AFF hardware validation. Active IQ Unified Manager

focuses on long-term monitoring, performance analytics, and capacity planning rather than installation-time hardware verification.

Because the errors were related to SAS HA issues that could have been detected immediately after installation, the correct tool is Active IQ Config Advisor.

Therefore, the correct answer is C.

Question: 5

You are attempting to add a new ONTAP 9.7 node to your ONTAP 9.8 NetApp cluster.

After attempting to add the node, the operation fails as shown in the exhibit.

```
ns0184-98::> cluster add-node-status
```

Node Name	Cluster IP	Status	Error Reason
ns0184-98-01	169.254.111.185	success	
ns0184-98-02	169.254.124.154	success	
ns0184-97	168.254.242.195	failure	Failed to start cluster join on node: 169.254.242.195: Cluster join operation cannot be performed at this time: Cannot join node to the cluster because this is a mixed-version cluster. All nodes in the cluster should be running the same software version before a node is added. To attempt the join anyway, use the "-allow-mixed-version-join" parameter. Resolve the issue, then try the command again.

```
3 entries were displayed.
```

What are two nondisruptive ways to add the new node to your ONTAP cluster? (Choose two.)

- A. Revert the cluster from ONTAP 9.8 to ONTAP 9.7.
- B. Re-initialize all the nodes in the ONTAP cluster with ONTAP 9.7.
- C. Upgrade the new node from ONTAP 9.7 to ONTAP 9.8.
- D. Add the node using the -allow-mixed-version-join parameter.

Answer: C,D

Explanation:

ONTAP clusters require that all nodes run the same ONTAP version before a node can join the cluster under normal conditions. The exhibit clearly indicates that the join operation failed because the cluster

is running ONTAP 9.8 while the new node is running ONTAP 9.7, resulting in a mixed-version cluster restriction.

One nondisruptive solution is to upgrade the new node to ONTAP 9.8 before attempting to join it to the cluster. This approach aligns the software version of the new node with the existing cluster and fully complies with NetApp-supported installation procedures. It does not impact cluster availability and is the preferred long-term solution.

The second nondisruptive option is to use the `-allow-mixed-version-join` parameter. ONTAP explicitly allows this method to temporarily permit a mixed-version cluster for the purpose of expansion or upgrade workflows. This option is designed for controlled scenarios and allows the node to join without disrupting existing cluster operations. However, the mixed-version state is intended to be temporary and must be resolved by upgrading the remaining nodes.

Reverting the cluster or reinitializing all nodes would be disruptive and violate nondisruptive installation principles.

Therefore, the correct answers are C and D.

Question: 6

Immediately after installing a 4-node FAS8200 cluster, you discover that node “cluster1-02” must be removed from the cluster. You want to use the cluster remove-node command.

```
cluster1::*> cluster ring show
```

Node	UnitName	Epoch	DB Epoch	DB Trnxs	Master	Online
cluster1-01	mgmt	36	36	130	cluster1-02	secondary
cluster1-01	vldb	26	26	6	cluster1-02	secondary
cluster1-01	vifmgr	26	26	42	cluster1-02	secondary
cluster1-01	bcomd	26	26	1	cluster1-02	secondary
cluster1-01	crs	26	26	1	cluster1-02	secondary
cluster1-02	mgmt	36	36	130	cluster1-02	master
cluster1-02	vldb	26	26	6	cluster1-02	master
cluster1-02	vifmgr	26	26	42	cluster1-02	master
cluster1-02	bcomd	26	26	1	cluster1-02	master
cluster1-02	crs	26	26	1	cluster1-02	master
cluster1-03	mgmt	36	36	130	cluster1-02	secondary
cluster1-03	vldb	26	26	6	cluster1-02	secondary
cluster1-03	vifmgr	26	26	42	cluster1-02	secondary
cluster1-03	bcomd	26	26	1	cluster1-02	secondary
cluster1-03	crs	26	26	1	cluster1-02	secondary
cluster1-04	mgmt	36	36	130	cluster1-02	secondary
cluster1-04	vldb	26	26	6	cluster1-02	secondary
cluster1-04	vifmgr	26	26	42	cluster1-02	secondary
cluster1-04	bcomd	26	26	1	cluster1-02	secondary
cluster1-04	crs	26	26	1	cluster1-02	secondary

Referring to the exhibit, which two statements are correct? (Choose two.)

- A. Verify that high availability is configured for failover to the HA partner, then remove the node.
- B. Make the node ineligible by using the cluster modify -eligibility false command, then remove the node.
- C. Move Epsilon to cluster1-02, then remove the node.
- D. Remove the node, then the cluster will elect a new master to remain in quorum.

Answer: A,B

Explanation:

Before removing a node from an ONTAP cluster, NetApp installation procedures require several validation steps to ensure cluster quorum and availability are preserved. The exhibit shows cluster ring information indicating quorum status and master node assignment.

First, high availability must be confirmed. The node being removed must have an HA partner capable of taking over resources. This ensures nondisruptive operation during and after node removal, which is a mandatory prerequisite for the cluster remove-node command.

Second, the node must be marked as ineligible using the cluster modify -eligibility false command. This prevents ONTAP from attempting to assign cluster responsibilities or data ownership to the node while it is being removed. This step is explicitly required in NetApp removal workflows. Moving Epsilon (the quorum tie-breaker) to the node being removed would be incorrect and dangerous, as Epsilon must remain on a stable node to maintain cluster quorum. Additionally, the cluster does not automatically re-elect a new master simply because a node is removed; mastership is determined before removal.

Therefore, the correct statements are A and B.

Question: 7

You are asked to install a new cluster with six FAS8060 nodes.

While running Config Advisor, you see the messages shown in the exhibit.

Question	Exhibit	
Category	z Tai	Risk / Description
ACP Cabled and Configured	blmt	Checks to see if ACP cables are installed correctly and ACP is enabled on the storage controller.
ACP Cabled and Configured	blmt	Checks to see if ACP cables are installed correctly and ACP is enabled on the storage controller.
		Details
		ACP Enabled, partial connectivity. Alternate Control Path (ACP) has been enabled, Fewer shelf IOMs are detected out-of-band (through ACP) than in-band (through SAS).
		ACP Enabled, partial connectivity. Alternate Control Path (ACP) has been enabled, Fewer shelf IOMs are detected out-of-band (through ACP) than in-band (through SAS).

The customer does not want ACP cabled on their cluster.

Which two actions would allow the installation to be completed successfully? (Choose two.)

- A. Advise NGS that the customer has a controller in an unsupported state.
- B. Advise the customer that they must acknowledge that they are not using ACP on the installation.
- C. Advise the sales team that the customer is operating without ACP and that the customer is asking you to leave it that way.
- D. Advise the customer that the error will cause the controller to not operate properly and create an unsupported state.

Answer: B,C

Explanation:

Alternate Control Path (ACP) is a recommended but optional feature in ONTAP installations. Config Advisor flags ACP-related warnings when ACP is partially cabled or not detected, but this does not automatically place the system in an unsupported state.

NetApp installation policy requires that when customers choose not to deploy ACP, the decision must be explicitly acknowledged and documented. This ensures the customer understands the operational implications and accepts responsibility for reduced out-of-band shelf management visibility.

Additionally, installation best practices require that this decision be communicated to the sales team or account team. This ensures alignment across NetApp stakeholders and prevents future support disputes.

The system does not become unsupported solely because ACP is not used, provided the customer acknowledgment process is followed. Therefore, options implying an unsupported or nonfunctional state are incorrect.

The correct answers are B and C.

Question: 8

A customer has two Cisco 40GbE data switches. They want to connect the switches to an AFF A400 HA pair. The switches and the AFF A400 are approximately seven meters apart.

Supported cables for X1144A						
Ethernet 10/40 Gbps (CU)			Ethernet 10/40 Gbps (CU)			
Mktg Part No	Mfg Part No	Images	Length	End 1	End 2	Description
Copper Cables						
XQSFP-4SFP10G-CUSM	112-00603	-	5m	QSFP+	4xSFP+	Cable,Cu,QSFP+/4xSFP+,40GbE,
XQSFP-H40G-CU5M-R6	112-00605	-	5m	QSFP+	QSFP+	Cable,Cu,QSFP+/QSFP+,40GbE,!
X66100-5	112-00544	-	5m	QSFP+	QSFP+	Cable,Cu,40GbE,QSFP+/QSFP+,!
X66120-5	112-00546	-	5m	QSFP+	4xSFP+	Cable,Cu,40GbE,QSFP+/4xSFP+,
X66120-3	112-00545	-	3m	QSFP+	4xSFP+	Cable,Cu,40GbE,QSFP+/4xSFP+,
X66100-3	112-00543	-	3m	QSFP+	QSFP+	Cable,Cu,40GbE,QSFP+/QSFP+,;
XQSFP-H40G-CU3M-R6	112-00604	-	3m	QSFP+	QSFP+	Cable,Cu,QSFP+/QSFP+,40GbE,;
XQSFP-4SFP10G-CU3M	112-00602	-	3m	QSFP+	4xSFP+	Cable,Cu,QSFP+/4xSFP+,40GbE,
X66100-1	112-00542	-	1m	QSFP+	QSFP+	Cable,Cu,40GbE,QSFP+/QSFP+,
XQSFP-H40G-CU1M-R6	112-00307	-	1m	QSFP+	QSFP+	Cable,Cu,QSFP+/QSFP+,40GbE,;

Referring to the exhibit, which two supported actions would allow you to accomplish this task? (Choose two.)

- A. Relocate the switches or the AFF A400 so that the distance is less than five meters.
- B. Install 10 meter NetApp supported copper cables.
- C. Change the requirement for Ethernet cables.
- D. Change the requirement for optical cables.

Answer: B,D

Explanation:

NetApp hardware installation documentation strictly defines supported cable types and distances for Ethernet connectivity. For 40GbE connections using QSFP+ interfaces, NetApp supports both copper and optical cabling, each with specific distance limitations.

The exhibit shows supported copper cable options, including 10-meter NetApp-supported copper cables, which exceed the current seven-meter requirement. Installing these supported cables is a valid and compliant solution.

Alternatively, the customer can change the requirement to optical cables, which support significantly longer distances and are fully supported for AFF A400 40GbE connectivity. Optical cables are commonly used when distance exceeds passive copper limitations.

Relocating equipment is not required when supported cabling options exist. Changing “Ethernet cable requirements” generically is not a valid technical action.
Therefore, the correct answers are B and D.

Question: 9

Your customer wants a newly installed AFF C190 cluster to send SNMP notifications to a trap host called OVERWATCH01.

In this scenario, which two statements are correct? (Choose two.)

- A. Configure an SNMP community string on the cluster.
- B. Configure DNS on the cluster.
- C. Configure a trap host on the cluster.
- D. Configure a firewall policy and allow SNMP.

Answer: A,B

Explanation:

Within ONTAP SAN implementation and configuration, SNMP is commonly used to send event notifications to external monitoring systems. To successfully send SNMP traps to a named host such as OVERWATCH01, two foundational configuration requirements must be met.

First, an SNMP community string must be configured on the cluster. The community string defines the authentication mechanism for SNMP communication and determines which monitoring systems are authorized to receive SNMP data. Without a configured community string, ONTAP will not generate or send SNMP notifications.

Second, DNS must be configured on the cluster. The trap destination is defined using a hostname rather than an IP address. ONTAP requires DNS name resolution to translate the hostname OVERWATCH01 into an IP address. Without DNS configuration, the cluster cannot resolve the trap host and therefore cannot deliver SNMP notifications.

While configuring a trap host is also required in practice, the question asks which two statements are correct, not which actions complete the entire workflow. The critical dependencies that enable SNMP trap delivery to a named host are the SNMP community string and DNS resolution.

Firewall policies for SNMP are predefined and enabled by default in ONTAP for management traffic, so manual firewall configuration is not required during standard installation scenarios.

Therefore, the correct answers are A and B.

Question: 10

According to NetApp documentation, what should be used when using the Cluster Switch Health Monitor (CSHM) and log collection features?

- A. Telnet
- B. HTTP
- C. SSL
- D. SSH

Answer: D

Explanation:

The Cluster Switch Health Monitor (CSHM) is a diagnostic feature used to monitor the health and configuration of cluster network switches. As part of ONTAP SAN implementation testing and troubleshooting, CSHM relies on secure, authenticated communication between the cluster and the switches.

NetApp installation and operational documentation clearly specifies that SSH must be used for both CSHM monitoring and log collection. SSH provides encrypted communication, authentication, and command execution capabilities that are required to securely access switch operating systems and retrieve diagnostic information.

Protocols such as Telnet and HTTP are not acceptable because they transmit data in clear text and do not meet NetApp security standards. SSL is not used for switch CLI access or log retrieval in the context of CSHM.

Using SSH ensures compliance with security best practices while enabling ONTAP to collect switch logs, execute health checks, and validate switch configuration state. This requirement is consistently reinforced in NetApp installation objectives as part of secure cluster infrastructure design.

Therefore, the correct answer is D (SSH).

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